

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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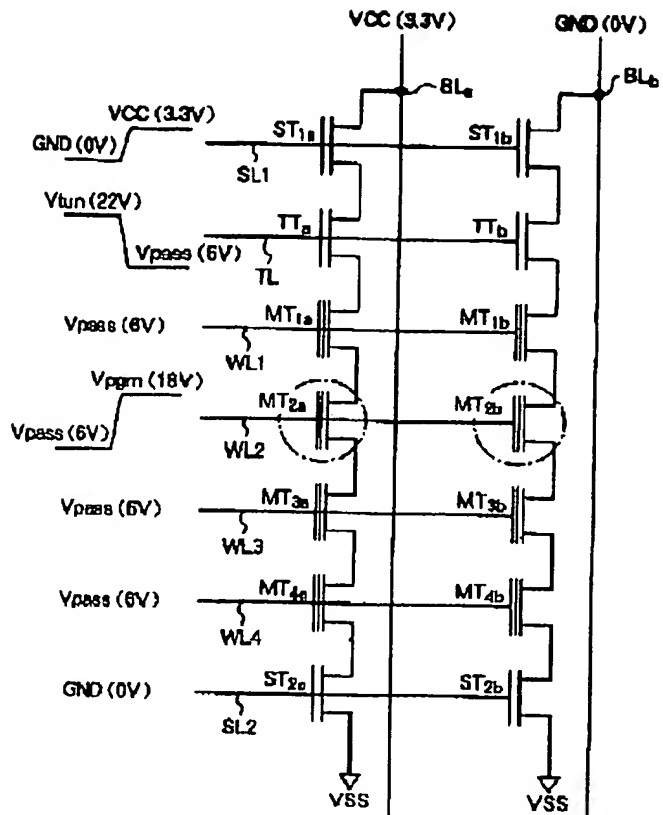
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APPLICANT : SONY CORP;

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TITLE : SEMICONDUCTOR NON-VOLATILE  
STORAGE DEVICE AND ITS DATA  
PROGRAMMING METHOD



**ABSTRACT :** PROBLEM TO BE SOLVED: To provide an instrument which is suitable for single electric operation at low voltage, easy in the layout of data latch circuit for each bit line, and capable of data programming superior in disturb durability by impressing a program voltage on the selection word line by a specified processing and by applying a package page program to the memory TR connected to the selection word line.

**SOLUTION:** The ground voltage GND is impressed on NAND column selective lines SL1, SL2 to hold each NAND column channel section in a floating condition. In this condition, all word lines WL1 to WL4 are impressed with a pass voltage Vpass and the tunnel current controller TL is impressed with a high-potential pulse Vtun of width of about several microseconds. As the results, electrons are extracted from each NAND column channel section in the floating condition through tunneling TRs, TT<sub>a</sub> to TT<sub>b</sub>, by FN tunneling current to raise the potential of each NAND column channel section to the program inhibit voltage.

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